November/December 1989 Volume 14, Number 6

A summary of recent news stories from the University of California, San Francisco

UCSF

News for You

First Nobel Prize for UCSF

Mike Bishop was stunned and Harold Varmus didn't believe it. But the news early Monday morning, October 9, was not only true, but historical. Bishop and Varmus, both researchers in UC San Francisco's Department of Microbiology and Immunology, had been named winners of the Nobel Prize for Medicine or Physiology, UCSF's first.

The prize came for their 1976 discovery that we all carry the seeds of cancer in our genes. Bishop and Varmus showed that these seeds, called oncogenes, are present in the cells of all organisms and that alterations in their structure result in cancer. More than 40 oncogenes have now been identified, all of which can trigger cancer in a healthy cell.

"The basic idea we helped establish," explains Varmus, "is that cancer has its origins in genes that normally do us some good. But after they become abnormal through mutation, they cause a role in cancer."

It was this connection—and its influence on knowledge about how a tumor develops—that the 50-member Nobel Assembly of Sweden's Karolinska Institute cited when awarding the $469,000 cash prize. Neither Bishop, who directs UCSF's George W. Hooper Research Foundation, nor Varmus, American Cancer Society Professor of Molecular Virology, expected that their work would lead to the Nobel. "I don't go to work thinking about the Nobel Prize," says Varmus. "I go to work thinking about the next experiment."



Harold Varmus (left) gives the thumbs-up at the October 9 press conference announcing the Nobel Prize given to both him and J. Michael Bishop (right).

And what did Varmus and Bishop do that afternoon after learning of their Nobel Prize? They went to see the Giants defeat the Cubs, of course.

Computer Model Mimics Brain

Scientists at UCSF and Stanford have developed a computer model of the brain that closely simulates the neurological development of an actual human brain.

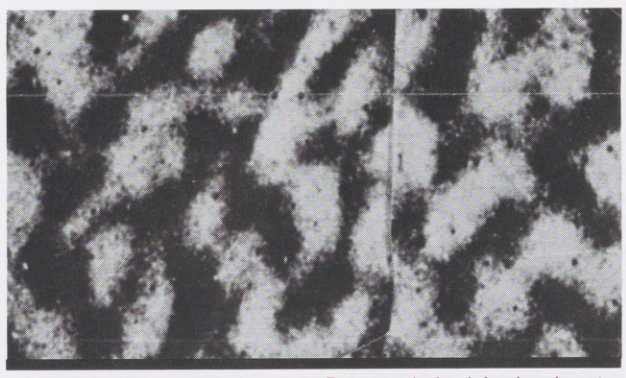
The key to the improved model is a mathematical analysis that predicts patterns of neurological connections.

"Other people have simulated models like this in computers," explains physiologist Michael P. Stryker, "and you can watch a brain model develop just as you can watch the brain develop in an animal. But without the mathematical analysis, you have no idea why or how it develops as it does."

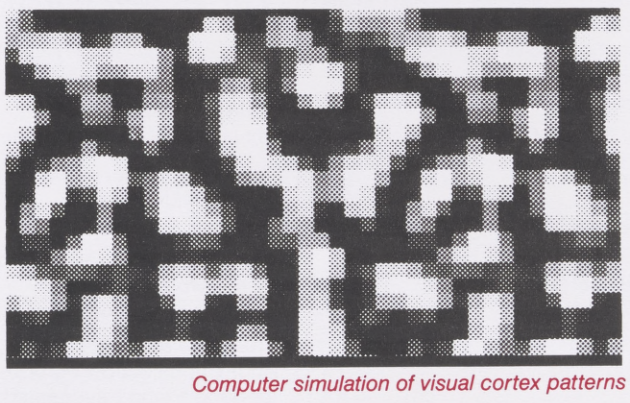
The mathematical analysis, performed by Kenneth D. Miller, a neuroscience and theoretical physics graduate student at Stanford working in Stryker's lab, was designed to understand the visual cortex—that part of the brain dealing with vision.

"This modeling shows that the mechanisms we think account for the development of the visual cortex can work," says Stryker, adding that discoveries made from computer models can lead to new therapies to repair brain damage.

Stryker says that scientists can apply the mathematical analysis not only to a model of the visual cortex but to developmental models of many other areas of the brain as well.



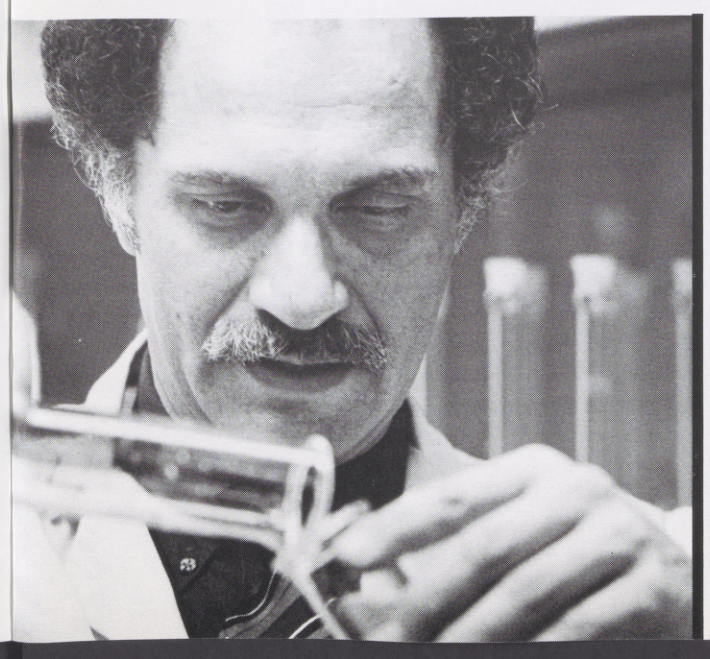
Patterns in brain's visual cortex



Computer simulation of visual cortex patterns

Heart Treatment May Be Harmful

A routine treatment for cardiac arrest—injections of sodium bicarbonate, commonly known as baking soda—may actually harm patients, UCSF researchers have found in the first controlled human study.



Allen Arieff

Bicarbonate injections cause brief disruptions in the metabolism of patients with heart disease, according to Allen I. Arieff, chief of geriatric research at the VAMC.

The study by Arieff and his colleagues involved 10 volunteers—heart disease patients who received either sodium bicarbonate or saline. Patients receiving saline suffered no adverse effects, but all the patients receiving bicarbonate had decreased coronary blood flow, a 25 percent drop in the body's use of oxygen, a 20 percent drop in heart use of oxygen, and a rise in lactic acid levels. The effects dissipated within two hours.

Although a healthy person, or even those with heart disease, can tolerate brief metabolic changes, patients with severe heart disease may not survive bicarbonate injections, according to Arieff. "In an emergency, during a heart attack or cardiac arrest, bicarbonate might push them over the edge," he says.

In Brief

125th Events Continue

UCSF continues its year-long 125th Anniversary celebration with several events which offer something to people of all ages. In the next two months we have a joint UCSF/USF seminar on education on November 1, Hastings Center's 20th Anniversary Bioethics Conference on November 8, the preview performance of our "Just About All Jazz" on November 10, and an art sale on November 15, not to mention a "Molecular Modeling Exhibit" beginning in November at the Exploratorium. See the inside calendar for details. Each special 125th item is tagged for easy reference. (The October calendar listing for the School of Dentistry's community clinics celebration in the last "To Our Neighbors" was in error. The celebration will take place in January 1990. See next issue for details.)

Mount Zion Draft EIR Available, Public Meeting Oct. 19

The draft Environmental Impact Report on the proposed integration of UCSF and Mount Zion Hospital and Medical Center is now available. A public information meeting will be held on Thursday, October 19, from 6 to 7:30 p.m. in the Mount Zion's Sutter Auditorium, 1600 Divisadero. A formal public hearing is scheduled for Wednesday, November 8, from 6 to 10 p.m. also in Sutter Auditorium. Letters of support or concern may be sent to David Layne, Millberry Union 4th fl. West, UCSF 94143-0286.

Laurel Heights Draft EIR Topic of Public Meetings

The draft Environmental Impact Report on Laurel Heights, ordered by the California State Supreme Court, will be discussed at two public information meetings at Laurel Heights on Monday, October 23 and November 13, from 6 to 7:30 p.m. in the Laurel Heights auditorium, 3333 California Street. A public hearing will be held on Monday, December 4, from 6 to 10 p.m., also in the auditorium. For further information call 476-3206. Letters of support or concern may be sent to David Layne, Millberry Union 4th fl. West, UCSF 94143-0286.

In the meantime, state Health Director Kenneth Kizer has approved the use of radioactive isotopes for biomedical research at UCSF's Laurel Heights campus.

"The quantity and type of radioactive materials to be used at the Laurel Heights facility pose extremely low risk," says Kizer in a statement. "In the very unlikely event of release to the environment, levels would be well below existing regulatory limits."

Vitamin D Volunteers Needed

Men and women over 80 years old are needed for a study to determine the effects of vitamin D on the muscle strength of older people.

Eligible volunteers will receive $10 per trip for each of the nine trips to the study center at the Veterans Administration Medical Center, and $50 at the end of the six-month study. For further information contact geriatric nurse specialist Suzanne Leveille at 750-2106.

UC SAN FRANCISCO 125 YEARS OF EXCELLENCE

What's happening

November/Decem
A bimonthly caler
events at UC San

Special Events

Wed., Nov. 1 — 125th
"USF & UCSF: Bridging the Centuries with Education & Community Service." Special joint lecture by UCSF Chancellor Julius Krevans and USF president Rev. John LoSchiavo. Parina Lounge, USF University Center, Golden Gate & Kittridge Sts. 10 a.m. For tickets call 666-6805.



Tues., Nov. 7
Guarneri String Quartet. Open rehearsal performance by this world famous chamber ensemble. $7 seniors, $8 general. Cole Hall, 513 Parnassus. 5:30 p.m. For tickets call 476-2035.

Global Warming Awareness Week:
Held in Rm. 302, Health Sciences West, enter through 513 Parnassus. Noon. Call Kathleen Ramos, 476-1741, or Amir Attaran, 476-3937.

Tues., Nov. 7:
"Endangered Rain Forests & Their Critical Place in Global Ecology." Slide show & discussion.

Wed., Nov. 8
"Hot Enough for You? The Greenhouse Effect & Global Warming: Causes, Predictions, Solutions." PBS film from the program "Nova."

Wed., Nov. 8 — 125th
Hastings Center 20th Anniversary Bioethics Conference: "Health Care & the Good Society." Hastings Center Director Daniel Callahan. Cole Hall, 513 Parnassus. 1-5 p.m. Call 476-9046.

Thurs., Nov. 16
Community Health Talk: Baldness: Understanding Hair Loss & What Can Be Done. Rm. 300 Health Sciences West, enter through 513 Parnassus. 7-8:30 p.m. Free parking available. Call 476-3206.

Fri., Nov. 17
UCSF Orchestra in Concert. Jonathan Davis conducts Mozart's "Sinfonia Concertante," Prokoifiev's Symphony #1 "The Classical" & the prelude to Debussy's "Afternoon of a Faun." Millberry Union Gym, 500 Parnassus. 8 p.m. Call 476-2542.

Brown Bag Lectures

All lectures are free and held on Wednesdays at noon in Rm. 300 Health Sciences West, enter through 513 Parnassus. For further information call 476-4394.

Nov. 1
Getting Healthy Without Getting Hurt.

Nov. 8
Scientific Study of the Unconscious.

Nov. 15
How Not to Get Ripped Off During the Holidays.

Nov. 22
Career Strategies for the 1990's.

Nov. 29
Hong Kong 1997: New Model or Potential Disaster?

Dec. 6
Magnetic Resonance Imaging.

Dec. 13
Highs & Lows of Holiday Blues.

UCSF-Laurel Heights Events

All events held in the auditorium at 3333 California St. Free parking available.

Mon., Oct. 23
Public Information Meeting on the UCSF Laurel Heights Draft Environmental Impact Report. 6-7:30 p.m. (See story on page 1.)

Thurs., Nov. 9
Community Health Talk: Management of Low Back Pain When Physical Therapy & Exercise is not Enough. 7-8:30 p.m. Call 476-3206.

Fri., Nov. 10 — 125th
Just About All Jazz: Bruce Forman Trio. Jazz guitarist Forman, joined by drummer Eddie Marshall & Larry Grenadier on bass. First of eight concerts in the UCSF Arts & Lectures' jazz series. $10 general; $9 UCSF faculty & staff; $8 seniors, students & Millberry Union members; $3 children under 14. Grandparents free when accompanied by grandchildren. 8 p.m.

Mon., Nov. 13
Public Information Meeting on the UCSF Laurel Heights Draft Environmental Impact Report. 6-7:30 p.m. (See story on page 1.)

Mon., Dec. 4
Public Hearing on the UCSF Laurel Heights Draft Environmental Impact Report. 6-10 p.m. (See story on page 1.)

Art & Exhibits

Wed., Nov. 15 — 125th
Hospitals Auxiliary Benefit Art Sale. Medical Sciences Bldg. lobby, 513 Parnassus. 8 a.m.-5 p.m. Call 476-4906.

Hospitals Auxiliary Art Exhibits.
On display in the lobbies of Moffitt/Long Hospitals, 505 Parnassus, during November are water colors, color photography, acrylics, silk screens, oriental water colors and etchings. The December display will feature oil painting, black & white photography, silk screens, acrylics and mini silk acrylics, color ballet photography, water colors and mini-etchings. A portion of all proceeds benefits patients at the Medical Center at UCSF. To purchase or reserve work, visit the Auxiliary Office, Rm. 182, Moffitt Hospital, 505 Parnassus, 9 a.m.-4 p.m., or call 476-4906.

Faculty/Alumni House Exhibits:
On display at 745 Parnassus. 9 a.m.-5 p.m. Call 476-4723.

The Warmth of Light & Shadow. New works by Jean Mooney. Through Dec. 1.

Pastels by Kate Solari Baker. Dec. 1-Feb. 28. Reception for the artist, Thurs., Dec. 7, 4:30-7 p.m. Call 476-4723.



Molecular Modeling Exhibit. — 125th
Beginning in November, a new exhibit created by UCSF faculty in the SF Exploratorium at the Palace of Fine Arts, Marina Blvd. & Lyon St. Call 563-3200.

San Francisco History

Free weekly classes trace the history of San Francisco from the 18th century to the present. Given by historian Charles Fracchia. Wednesdays through Dec. 13. 7:30-9:30 p.m. Toland Hall, 533 Parnassus. For further information call 567-2725.

Mount Zion EIR Hearings

Public meetings to discuss the draft Environmental Impact Report for UCSF/Mount Zion Hospital & Medical Center integration. Held in Mount Zion's Sutter Auditorium, 1600 Divisadero St. (See story on page 1.)

Thurs., Oct. 19
Public Informational Meeting. 6-7:30 p.m.

Wed., Nov 8
Formal Public Hearing. 6-10 p.m.

Senior Health Talks

Free lectures by UCSF staff geared to senior citizens. For further information call 476-3206.

Mon., Nov. 13
Helping Friends Who May Be Depressed. SF Senior Center, 481 O'Farrell St. 1 p.m.

Wed., Nov. 15
Memory Loss. Bernal Heights Senior Center, 515 Cortland Ave. 12:35 p.m.

Thurs., Nov. 16
Psychology of Aging. 7th Ave. Presbyterian Church, 1329-7th Ave. 1 p.m.

Thurs., Nov. 16
Urinary Tract Incontinence. SF Senior Center, Aquatic Park, 890 Beach St. 1 p.m.

Thurs., Nov. 30
Chest & Respiratory Functions. The Heritage, 3400 Laguna. 1:30 p.m.

Tues., Dec. 5
Urinary Incontinence. North Beach Seniors, 666 Filbert St. 1 p.m.

Thurs., Dec. 7
Beating the Holiday Blues. St. Phillip's Seniors, 725 Diamond St. 11 a.m.

Mon., Dec. 11
Wellness & Aging. Richmond YMCA, 360-18th Ave. Noon.

Tues., Dec. 19
Folk Medicine. First Baptist Seniors. 21 Octavia. 1 p.m.

AIDS Programs

Sponsored by UCSF AIDS Health Project. For more information call 476-6430.

Living with HIV.
Public forum every other month.

Individual Risk Assessments & Referrals.
By appointment. Free.

Support Groups.
Drop-in & eight-week facilitated groups for men & women with AIDS, ARC or HIV infection, in a risk group or otherwise affected.

Positives Being Positive.
Anonymous support groups in the community for people who have tested HIV positive but have not developed symptoms of AIDS or ARC.

Caregiver Training.
Caring & self-caring skills for professionals & volunteers.

Campus Tours

All tours are free and take place at 1 p.m. on Tuesdays, Nov. 7, 14, 21 & 28 and Dec. 5, 12 & 19. Meet in the lobby of Medical Sciences building, 513 Parnassus. For further information call 476-4394.

Volunteer Orientation

Programs to acquaint new & prospective volunteers with opportunities available in the Medical Center at UCSF. Held in Rm. 191 Long Hospital, 505 Parnassus. For further information call 476-1196.



Christmas Chorales

A series of holiday performances by the UCSF Community Chorus, under the direction of Adrian Horn. Includes singers from both the campus and community. For further information call 476-2542.

Tues., Nov. 14
Christmas Concert Open Rehearsal. Cole Hall, 513 Parnassus. 7 p.m.

Sat., Dec. 9, 8 p.m.
Sun., Dec. 10, 4 p.m.
Christmas Concert. Mozart's "C-Minor Mass" & Bach's "Magnificat." First Congregational Church, Post & Mason. $8.

Sat., Dec. 16
Festival of Carols. Holiday sing-a-long. First Congregational Church, Post & Mason. 7:30 p.m.

Cole Hall Cinema

Films are shown in Cole Hall, 513 Parnassus, on Thursdays at 5:45 & 8:15 p.m., Fridays at 6:30 & 9 p.m. (unless otherwise noted). Children under 14 $2; UCSF students, seniors & Millberry Union members $2.50; general $3. Call 476-2571.

Nov. 2 & 3
Do the Right Thing.

Nov. 9 & 10
Field of Dreams.

Nov. 16 at 5:45 & 7:45 p.m.
Nov. 17 at 6:30 & 8:30 p.m.
When Harry Met Sally.

Nov. 30 at 5:45 & 8:30 p.m.
Dec. 1 at 6:30 & 9:15 p.m.
Dead Poets Society.

Paths of Healing & Wholeness

Free talks on Fridays at noon in Toland Hall, 533 Parnassus, unless otherwise noted. November and December continue the Financial Planning Series. Call Marie Lehrer at 476-3939.

Nov. 3
Creative Prosperity.

Nov. 10
How Are We Doing on Our Way to Prosperity? Potluck lunch & discussion.

Nov. 17
Abundance & Simplicity.

Dec. 1
Prosperity is Natural.

Dec. 8
Properity, Balancing Money & Spirituality. Room 517, Nursing Bldg., 533 Parnassus.

Workshop:
Mon., Nov. 6
Creativity & Success: Tools for Overcoming Barriers. Room 717B, Nursing Bldg., enter through 533 Parnassus. 7-10 p.m. $20.

CPR Training — 125th

"Save A Heart" Program. CPR classes sponsored by UCSF CPR Center. Rm. 229, Nursing Bldg., enter through 521 Parnassus. Sat., Nov. 18 & Dec. 9; Thurs., Dec. 28. 9 a.m.-noon. $20. For information & registration, call 476-1817.

Breast Cancer Screening

Women can have low-cost mammograms—x-rays to screen for breast cancer—from a mobile van that travels to convenient Bay Area locations. The procedure takes approximately 20 minutes and costs $50. Your physician's approval is required. For appointments call 990-0459 or 476-2193 between 9 a.m. and 3:30 p.m.

Oct. 30-Nov. 3
Sunset district. On Irving St. between 25th & 26th Aves.

Nov. 6-7
Palo Alto Jewish Community Senior Center. For appointments call Marilyn Sacks, 439-9400.

Nov. 8-9
Palo Alto Senior Center. For appointments call Ellen Detrick, 327-2811.

Nov. 10
Los Altos Senior Center. For appointments call May Wang, 948-7483.

Nov. 13-17
Taraval St. Between 17th & 18th Aves.

Nov. 20-22
California First Bank. 350 California St. (Nov. 23-24 are holidays.)

Nov. 27-Dec. 1
Levi Strauss Corp. On Sansome St. near Greenwich.

Dec. 4-8
Embarcadero. On Drumm St. between Sacramento & Clay.

Dec. 11-15
UCSF-Laurel Heights. 3333 California St.

Dec 18-21
Sunset district. On Irving St. between 25th & 26th Aves. (Dec. 22-25 are holidays.)

Dec. 26-28
Diamond Heights Blvd. Near Safeway. (Dec. 29-Jan. 1 are holidays.)

Women's Programs

Events & workshops sponsored by UCSF Women's Resource Center. For further information call 476-5836.

Bay Area Women Writers:
Series of free noontime readings & discussions.

Thurs., Nov. 9
Tillie Olsen. Prize-winning novelist & short story writer. Toland Hall, 533 Parnassus.

Wed., Nov. 15
Jean Shinoda Bolen. Mythologist, psychiatrist & Jungian analyst. Cole Hall, 513 Parnassus.

Personal Safety

Wed., Nov. 15, 6-9 p.m.
Sat., Dec. 9, 9 a.m.-noon.
Tear Gas Certification Class. Laguna Honda School Conference Room, 1350-7th Ave. $12. Pre-registration required. Call 476-5683.

Presentations:
By appointment to groups in the community or at your workplace.

Crime Prevention. Presented by UCSF Police Department. Call 476-5683.

Personal Safety, Rape & Assault Prevention. Presented by UCSF Rape Prevention Education Program. Call 476-5222.

UCSF
University of California, San Francisco
News and Public Information Services
513 Parnassus Avenue
San Francisco, CA 94143-0462

Too weak for a transplant, he then developed pneumonia and had to be hospitalized.

Kidney dialysis means life.

But for patients who need it, it's a ball and chain. It drags on you. It ties you down. Long hours spent hooked up to a machine a few times a week. Almost constant fatigue because it results in anemia.

Albert Rocha, a straightforward, active man, knew he didn't want dialysis. Only 45-years-old, he had too much to do. A busy ear, nose and throat practice in his native Fresno. A five-year-old daughter, Casey, bursting with energy. Weekends exploring the state with his wife, Gale.

But kidney failure in May and the prospect of life-time dialysis threatened his full life. Fortunately for Albert, state-of-the-art medicine at UC San Francisco, along with a generous brother, restored his health.

UCSF's Kidney Transplant Service is the largest program of its kind in the world. Since it began 25 years ago, the service's surgeons have performed more than 3,400 transplants.

"We've developed an expertise in managing complex problems," says Kidney Transplant Service Chief Oscar Salvatierra. The surgeons can reconstruct a urinary tract for patients who have been forced to expel urine through an artificial, external mechanism. They also transplant kidneys in infants, a life-saving operation performed by few other medical centers in the country.

Albert felt confident about the Transplant Service. He had attended medical school at UCSF. And as a surgical resident, he had rotated through the service under Salvatierra. "I know how good they are. I felt a real sense of security."

Approximately 120,000 people in the country are under treatment for kidney failure. Most undergo dialysis, mainly because other medical risks or complications preclude transplantation, or because they cannot get a donated kidney.

Albert Rocha had to wait three months for his transplant. He simply was too sick. He suffered hypertension, which probably triggered the kidney failure in the first place. He was anemic from dialysis needed to sustain his life after the initial diagnosis. His weakened condition also caused pneumonia and put him in the hospital for a week.

"I couldn't believe this was the Albert I had known," recalls Salvatierra. "He was that sick."

But after recovering from the pneumonia, Rocha was ready for the operation. His brother, Charles, donated a kidney. The brother's blood and tissue type matched perfectly. A big boost for a successful outcome since the body is much less likely to reject the donated organ.

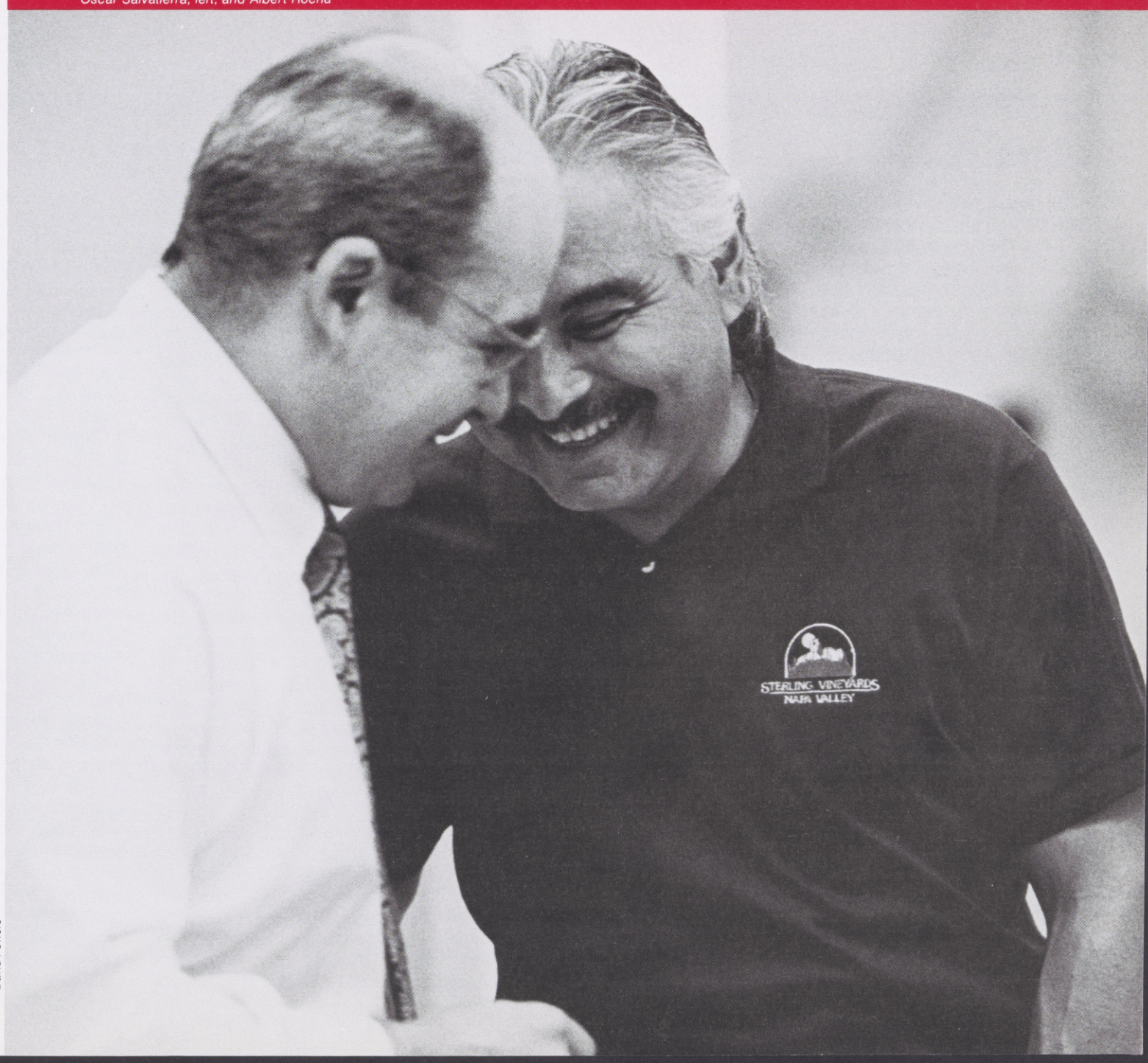
Salvatierra performed the transplant. Surgeons removed one of Charlie's kidneys in one operating room and Salvatierra carried it in a sterilized bowl into an adjacent operating room. He cleansed the kidney and then inserted it in Albert's lower abdomen, below the failed kidneys. He tapped into the Illiac artery and vein, which serves the lower extremities, for blood to supply the new kidney. And he attached the new kidney's ureter, the tube which carries urine from the kidney to the bladder, to Rocha's bladder.

A few hours after surgery, Albert felt much better. And after just a couple weeks of recuperation, he returned to his old, vital self. He's back at work now. And he's looking forward to traveling with his family.

"This transplant has given me a second chance at life."

—Marshall Krantz

Oscar Salvatierra, left, and Albert Rocha



David Powers

November/December 1989

To Our Neighbors

Two UCSF scientists win Nobel Prize in Medicine

Sodium bicarbonate injections may harm heart patients

Computer mimics brain

University of California, San Francisco
513 Parnassus Avenue, San Francisco, CA 94143-0462

More News for You

Study Shows UCSF Emissions Have Minimal Health Effect on Community

An independent study released last month by UC San Francisco shows that emissions from its Parnassus Heights research and teaching laboratories and hospitals have a minimal impact on neighborhoods surrounding the campus.

No detectable effect on air quality was found in any neighborhood around the campus, even as close as half a block from the campus boundary. Levels of chemicals in the sewer water coming from UCSF were a fraction of what applicable government standards allow. No radioactivity was found in soils, sewers or airborne dust.

As a result of these low levels, the study concluded that emissions from Parnassus Heights research laboratories pose an extremely low risk to the public.

Answer Concerns

The study was initiated by the campus in January 1988 in an attempt to answer some of the concerns expressed by UCSF's neighbors and to assure the campus that research, teaching and patient care at Parnassus Heights are conducted in a safe manner.

Key findings of the study, performed by the Sacramento-based Radian Corporation, are:

- The highest radiation levels found on and around the Parnassus campus are 33 times less than government standards allow. No radiation above background levels could be detected in the air in any neighborhood around the campus. No radioactivity was found in soils, sewers or airborne dust.
- There was no statistical difference between upwind and downwind concentrations of chemicals in the air, indicating that chemicals are not released from the campus into the air in large enough amounts to measurably affect air quality.
- Levels of chemicals in the sewer water coming from UCSF are six times below what applicable government standards allow. Chemicals found in soil on the Parnassus Heights campus and in the neighborhood are no different from what is found in any urban environment.
- The wind direction at UCSF Parnassus Heights is predominantly from the west southwest, about parallel to Parnassus Avenue. The wind blows toward the Noe and Eureka Valley areas a small percentage of the time. (This is important in view of the concern expressed by some residents of these neighborhoods over a possible "cancer cluster," or slightly elevated number of cancer cases in their area, which they feared might be due to UCSF emissions.)
- Overall, the estimates of emissions showed that about 107 pounds of chemicals may evaporate into the air each day from UCSF Parnassus. Not all of these are considered "toxic." This amount is slightly more than the emissions from a neighborhood dry cleaner.
- Of the total quantity of potentially toxic air emissions, the most significant in terms of health risk was ethylene oxide (2.2 pounds daily) from hospital and dental school sterilizers vented to the roof. Sterilizers are used routinely in most hospitals to disinfect instruments and supplies, and ethylene oxide is the most effective substance in disinfecting these items. UCSF has ordered the installation of new state-of-the-art scrubbers that will remove 98 percent of sterilizer emissions.

"Worst Case" Model

The study used a health risk assessment computer model with a hypothetical "worst case" scenario which assumed that an individual lives all of his or her life (70 years) at the point of highest ground-level chemical concentrations without ever going indoors or leaving the spot. In the theoretical situation, the possibility of developing cancer is estimated to be 14 chances in a million, reduced to 5 chances in a million after installation of the state-of-the-art scrubbers on the hospital and dental school sterilizers.

The scrubber for the hospital sterilizers, which emit the bulk of the ethylene oxide, is due to be installed by fall. Installation of the scrubber for the dental school sterilizer, which emits only 10% of the total ethylene oxide, is expected to be completed by next summer.

1 Case in 700 Years

A hypothetical added risk of 5 in a million corresponds to an estimated one additional cancer case in 700 years in all of San Francisco.

For comparison, a person who lives near a gas station or dry cleaner has an estimated added risk of 10 to 50 chances in a million of developing cancer as a result of being exposed to emissions from these commercial facilities.

In order to assure that the data gathered during the study received comprehensive evaluation by a number of individuals, UCSF and the University of California Office of the President commissioned an independent peer review by both outside consultants and internal UC staff. UCSF also has made a commitment to bring in another independent party to review the Radian study, the selection to be made by a committee composed of members of the community task force, the San Francisco Department of Public Health and UCSF.

The environmental study and health risk assessment at Parnassus Heights are the first truly comprehensive environmental assessment with community input to be conducted on any campus in the country other than the National Institutes of Health. The study cost $1.6 million.

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